

The opinion in support of the decision being entered
today is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DANIEL BARBER, JAMES KING, STERETT ROBERTSON,
SCOTT RAY, MALCOLM WARREN, ANTON ARNOLDY,
MICK A. TROMPEN, STANLEY M. GORGACZ, and DENNIS WUJEK

Appeal No. 2007-0205
Application No. 09/812,302
Technology Center 2600

Decided: August 30, 2007

Before KENNETH W. HAIRSTON, MAHSHID D. SAADAT, and
JEAN R. HOMERE, *Administrative Patent Judges*.

SAADAT, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1-10, 12, 13, 16-20, 22-26, 29-31, 33, 34, 43-47, 49-53, 55-60, 62, 63, 66-69, and 71-81. Claims 36-42 are allowed while claims 11, 14, 15, 21, 27, 28, 32, 35, 48, 54, 61, 64, 65, and 70 have been objected to, but otherwise allowable if rewritten in independent form to include

all of the limitations of their base claim and any intervening claims.¹ We have jurisdiction under 35 U.S.C. § 6(b).

Appellants invented a pest control device to detect and exterminate one or more selected species of pest. A number of such devices having wireless communication capabilities are interrogated to gather data from the pest control devices (Specification 2). The interrogation may be in a hand-held form configured to individually establish wireless communications with each of the pest control devices (*id.*). An understanding of the invention can be derived from a reading of representative independent claims 1 and 50 and claims 2, 4, 31, and 68, which are reproduced as follows:

1. A method, comprising:

installing a pest control device including a communication circuit; and

locating the pest control device after installation by receiving a wireless transmission from the pest control device.

2. The method of claim 1, wherein the pest control device is one of a plurality of pest control devices placed at least partially in the ground about a building during said installing, the pest control devices each including a passive RF transmitter configured to transmit a unique identifier in response to an interrogation signal from a hand-held interrogator.

4. The method of claim 1, wherein said locating includes sending an interrogation signal to the transmitter of the pest control device with an interrogator and receiving an identification signal from the pest control device in response to the interrogation signal.

¹ Claims 11, 14, 15, 27, 28, 32, 35, 61, and 70 have been indicated to be allowable in the Examiner's Answer (Answer 12).

31. The system of claim 30, wherein said wireless communication circuit includes an active RF communication circuit.

50. A system, comprising: at least one pest control device including a pest sensor, a first environmental sensor, and a circuit operable to communicate information corresponding to a first environmental characteristic detected with said first environmental sensor and pest detection status determined with said pest sensor.

68. The method of claim 1, wherein the pest control device is installed with a bait including a pesticide.

The Examiner relies on the following prior art references:

| | | |
|------------|--------------|---------------|
| Zimmermann | US 3,836,842 | Sep. 17, 1974 |
| Lowe | US 5,764,138 | Jun. 9, 1998 |
| Su | US 5,815,090 | Sep. 29, 1998 |
| Allen | US 6,111,520 | Aug. 29, 2000 |

The claim rejections under appeal are:

1. Claims 1 and 7 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Su.
2. Claim 68 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Su.
3. Claims 2, 3, 8-10, 12, 13, 29, 30, 33, 34, 56, 59, 60, and 69 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Su and Zimmermann.²

² The examiner appears to have inadvertently included Lowe in the statement of the rejection whereas the discussion of the rejections refers only to Su and Zimmermann.

4. Claims 4-6, 16-20, 22-26, 43-47, 49, 53, 56-58, 62, 63, 66, 67, and 77-81³ stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Su and Lowe.
5. Claim 31 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Su, Lowe, and Zimmermann.
6. Claims 50-53 and 55 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Su, Lowe, and Allen.

Rather than reiterate the opposing arguments, we refer to the Briefs and the Answer for the respective positions of Appellants and the Examiner.

We affirm.

THE ISSUE

1. 35 U.S.C. § 102 Rejection

To show that the Examiner erred in rejecting the claims under 35 U.S.C. § 102(a), Appellants argue that the devices disclosed in Su use wired prototypes and merely indicate whether the device is present or not, instead of actually “locating” the device (Reply Br. 10). Appellants further contend that even if such detection in Su meets the “locating” limitation of the claims, detecting the device in combination with the wireless communication capability is not disclosed (*id.*). Therefore the issue turns on whether Su teaches the claimed subject matter including locating the device by receiving a wireless transmission, as recited in claim 1.

³ The rejection appears to have been intended to include claims 75 and 76.

2. *35 U.S.C. § 103 Rejections*

The issue is whether Appellants have shown that the Examiner erred in rejecting the claims under 35 U.S.C. § 103. Appellants' arguments are focused on various teachings in Su and whether modifying the embodiments disclosed in Su would have resulted in the claimed subject matter. Therefore, the issue turns on whether there is a legally sufficient justification for combining the disclosures of Su, Zimmermann, Lowe, and Allen and if so, whether the combination of the applied references teaches the claimed subject matter recited in the claims.

FINDINGS OF FACT

The following findings of fact (FF) are believed to be supported by a preponderance of the evidence.

1. Su relates to materials and methods for monitoring and management of pests (Abstract; col. 2, ll. 15-17) wherein the location of sensed termite activity may be associated with a particular sensor or group of sensors (col. 2, ll. 23-26).
2. Su discloses that the management system provides population monitoring/capturing and delivery of toxicant to a pest (col.3, ll. 18-25).
3. The monitoring device is interrogated periodically for evidence of termite infestation (col. 3, ll. 55-56).
4. Su further discloses that the sensors may be arranged in zones so as to provide more detailed information regarding the precise location of detected termite activity (col. 4, ll. 9-17).

5. As shown in Figure 3, Su provides for wireless communication instead of hard-wire components such that the sensors communicate with the data collection unit over independent wireless links formed using wireless communication devices (col. 4, ll. 20-25).
6. The on-site collection unit registers data relating to each sensor or groups of sensors either continuously, or on a specific schedule, or on demand (col. 4, ll. 25-29).
7. Su further discloses a representation of the locations of the sensors in Figure 7 in which the results of interrogation show the zone or location in which the presence of termites was detected (col. 7, ll. 4-13).
8. Su further discloses that although the sensors described for the remote monitoring system are designed to use circuit interruption to detect the presence of termites, other sensors such as moisture meters strategically placed in structural wood to detect potential moisture problem, acoustic emission devices to detect feeding activity of other wood destroying insects such as drywood termites, powderpost beetles, wood borers, or a miniature digital balance for measuring weight loss of cockroach or ant bait stations, may be used in accordance with the present invention (col. 7, ll. 25-34).

9. When termites are detected, toxins are delivered separately, or the sensors can be modified with added toxic delivery devices (col. 7, ll. 47-55). Specifically, Su discloses that in addition to the practice of replacing monitoring devices with toxicant delivery devices, another embodiment of the invention comprises a monitoring device which remains in place and a toxicant delivery device which can be added to, or fitted around, the monitoring device if the need arises to deliver toxicant (col. 7, ll. 50-55).
10. Zimmermann discloses interrogation of marking devices using a hand-held device (Abstract; col. 4, ll. 56-68).
11. Lowe provides an RF identification system wherein an ID code reader is provided and an RF identification tag is coupled to the item that is to be monitored and the ID code reader queries the tag. The tag comprises two RF transponder chips that store data relating to the item, and an excitation coil coupled thereto (Abstract). An ID code reader queries the RF identification tag 11 using RF signal (col. 3, ll. 3-7, 9-12, 50-56).
12. Allen discloses that in the case where a temperature, pressure, or other physical reading of an environment is measured from a sensor mounted to a mobile structure such as a turbine blade or other moveable apparatus, chamber or vessel, the wire leads connected to traditional sensors may interfere with the operation of the particular mobile structure (col. 2, ll. 8-15).
13. Allen further provides for a sensor with combined pressure and temperature sensing mechanisms (Figure 9; col. 11, ll. 56-65).

PRINCIPLES OF LAW

1. *Anticipation*

A rejection for anticipation requires that the four corners of a single prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation. *See Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1946 (Fed. Cir. 1999); *In re Paulsen*, 30 F.3d 1475, 1478-79, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994).

2. *Obviousness*

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of presenting a prima facie case of obviousness. *See In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993).

The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, and (3) the level of skill in the art. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966). *See also KSR Int'l v. Teleflex, Inc.*, 127 S.Ct. 1727, 1734, 82 USPQ2d 1385, 1391(2007) (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”)

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Leapfrog Enter., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161, 82 USPQ2d 1687, 1691 (Fed. Cir. 2007) (quoting *KSR*, 127 S. Ct. at 1739-40, 82 USPQ2d at 1395). “One of the ways in which a patent's subject

matter can be proved obvious is by noting that there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent's claims.” *KSR*, 127 S. Ct. at 1742, 82 USPQ2d at 1397.

The Court explained, “[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *Id.* at 1740-41, 82 USPQ2d at 1396. The Court noted that “[t]o facilitate review, this analysis should be made explicit.” *Id.*, citing *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”). However, “the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.*

The Examiner can satisfy this burden by showing some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR*, 127 S. Ct. at 1741, 82 USPQ2d at 1396 (citing *Kahn*, 441 F.3d at 988, 78 USPQ2d at 1336).

ANALYSIS

Claims 1 and 7

After a review of Su and considering the arguments presented by Appellants and the Examiner, we agree with the Examiner that the pest monitoring system disclosed by Su anticipates the subject matter of claims 1 and 7. As pointed out by the Examiner (Answer 12), Su discloses using wireless communication between the sensors and the data collection unit (FF 4-6). Contrary to Appellants' assertion (Reply Br. 10), the collection of data is performed in the same manner as the hard-wire sensors and the only change would be related to the manner in which the data is transmitted.

We also disagree with Appellants (*id.*) that the claimed locating of the sensors is different from the information provided by the sensors in Su. In that regard, the monitoring device of Su interrogates the sensors for infestation evidence (FF 3) and also receives information regarding the location of the sensor (FF 4). The information received from a sensor combined with its position in a zone provides sufficient information for locating the sensor in that zone. This is consistent with Appellants' disclosed embodiment that based on a map of the devices installed in a building, the collected data indicate the presence of pests in the location corresponding to that device (Specification 16:18-30). In other words, knowing which zone the sensor is supposed to be positioned in, the wireless communication from that sensor indicates not only its presence, but also the location of the sensor and the activities it monitors.

Therefore, based on our analysis above, we find that the sensor arrangement of Su anticipates the claimed subject matter by disclosing

transmission and collection of data related to each sensor that provides information regarding their location in relation to a zone.

Claim 68

Appellants, in arguing the patentability of claim 68 (Reply Br. 11), argue that Su adds toxicant to the sensor if needed and therefore cannot constitute installing a pest control device with a pesticide and a wireless circuit, and then locating it. We disagree with that characterization and point to FF 8. The teachings in Su do not preclude adding the toxicant delivery device to the monitoring device before installing and monitoring for termites. In that regard, Su allows for the monitoring and delivery of toxicant steps to be performed simultaneously (col. 3, ll. 36-37), which requires the toxicant be added to the monitoring device before it is installed. Based on our analysis above and the teachings of Su, we agree with the Examiner's position (Answer 14) that one of ordinary skill in the art would have installed the monitoring device and the bait in one step when delivery of toxicant is also needed (FF 8).

Claims 2, 3, 8-10, 12, 13, 29, 30, 33, 34, 56, 59, 60, and 69

Appellants argue that the combination of the references provides no teachings related to a passive RF transmitter configured to transmit a unique identifier in response to an interrogation signal (Reply Br. 14). The Examiner's position appears to be based on the fact that Su provides for identifying the sensor in response to interrogation (Answer 4), which allows the information about the zones containing at least one sensor be checked (FF 1-3). We agree with the Examiner. The interrogation of the monitoring devices yields information about each device within their corresponding zone (FF 4-5), which indicates that some kind of identification information

is transmitted for identifying that particular device. The Examiner's reliance on Zimmermann is, therefore, more relevant to teaching a hand held device for performing the interrogation (Answer 4).

Appellants' arguments with respect to claim 69 (Reply Br. 16), claim 9 (*id.* at 9-10), and claim 2 (*id.* at 17-18) are similar to the points addressed above. *See also* FF 4-7. As we find the Examiner's position with respect to these claims to be reasonable and supported by factual evidence, we disagree with Appellants that the Examiner erred in rejecting claims 2, 3, 8-10, 12, 13, 29, 30, 33, 34, 56, 59, 60, and 69.

Claims 4-6, 16-20, 22-25, 43-47, 49, 53, 56-58, 62, 63, 66, 67, and 77-81

Appellants argue that the combination of Lowe with Su is improper because Lowe cannot store the interrogated information (Reply Br. 19). The Examiner responds by asserting that the RF identification system of Lowe is illustrative of the parameters involved in the interrogation of the sensor devices in Su which use wireless communication (Answer 7). We agree with the Examiner that combining a known RF identification system with the monitoring devices of Su provides specific details for the data collection system of Su and does no more than yield predictable results with respect to interrogating the sensors and, therefore, would have been obvious to one of ordinary skill in the art.

Appellants further argue patentability of claims 4-6 based on the long-felt, yet unmet, need to locate pest control devices, as described in Appellants' Specification (Reply Br. 20). While such need may be described by Appellants, their Specification provides for techniques that are taught or suggested by the applied prior art. Absent implementation of a

positioning device, such as global positioning system, the sensors are disclosed by Appellants to be positioned in specific locations and mapped to identify the corresponding location they are monitoring (Figures 1, 10, and 12; Specification 4:10-17, 16:18-30, 17:27-32).

With respect to Appellants' argument related to the use of the same ID code in multiple sensors or tags (Reply Br. 21), we note that Lowe provides the general principals of identifying and locating an object. Lowe's specific example related to tires having the same code merely is one of the embodiments that signifies an option for using tags with identical ID code when the objects are identical. Nothing in Lowe precludes querying tags having different ID codes (FF 11).

Appellants further argue that claims 6, 45, and 58 require transmitting information about the pest control device from the interrogator to a data collection device, which is absent in the applied prior art (Reply Br. 22). We disagree with Appellants (*id.*) that such arrangement would not have been obvious to one of ordinary skill in the art. Su, in fact, discloses such arrangement in Figure 1 by showing a data collection unit (which interrogates each sensor and collects data) and a remote host computer that receives data obtained by the sensors (col. 2, ll. 42-46).

With respect to claim 47, Appellants argue that the use of moisture meter in Su appears to be in terms of alternatives, instead of an addition to the sensor (Reply Br. 23). We disagree. The use of moisture detector as disclosed by Su (col. 7, ll. 26-35) describes a mechanism for sensing the presence of termites as an alternative to the circuit interruption mechanism. In fact, both mechanisms sense a physical condition that corresponds to the presence of the pests.

Claim 31

With respect to claim 31, Appellants rely on specific embodiments of Zimmermann and Lowe and assert that Zimmermann teaches away from using active transponder-based markers since the cost associated with powering the active markers is described as undesirable in Zimmermann (Reply Br. 27). We disagree. In fact applying the interrelated teachings of multiple patents, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art to the combination of the references at hand, we find that using active markers is not contrary to the teachings of Zimmermann. While the active markers are disclosed by Zimmermann to require an external power source, when cost and feasibility of having such power source is not a consideration, one of ordinary skill in the art would have found the combination obvious.

Claims 50-53 and 55

Appellants allege error in the Examiner's rejection by arguing that adding a moisture sensor in Su is an alternative configuration to the circuit interruption arrangement and cannot be modified to include two different sensor types in the same device (Reply Br. 28-29). However, the Examiner asserts that the rejection is based on using different types of sensors disclosed by Su in the same device as suggested by Allen in order to eliminate the communication means for two separate sensor types (Answer 11-12). We find the Examiner's position to be supported by factual evidence (FF 12-13) which indicates desirability of combined sensors in a compact device. Su allows for sensors for detecting other parameters to be used in the monitoring device (FF 8). While no particular combination of

these sensors is identified by Su, we agree with the Examiner that one of ordinary skill in the art would have found it obvious to include a combination of different sensor types in view of the teachings of Allen, which suggests a more compact arrangement (FF 13).

CONCLUSION

In view of the analysis above, we find that Su *prima facie* anticipates the subject matter of claims 1 and 7 as the reference teaches all the recited features. Accordingly, the 35 U.S.C. § 102(a) rejection of claims 1 and 7 over Su is sustained.

Additionally, based on our findings above and the weight of arguments presented by Appellants and the Examiner's response, we also sustain the 35 U.S.C. § 103 rejection of claim 68 over Su, of claims 2, 3, 8-10, 12, 13, 29, 30, 33, 34, 56, 59, 60, and 69 over Su and Zimmermann, of claims 4-6, 16-20, 22-26, 43-47, 49, 53, 56-58, 62, 63, 66, 67, and 77-81 over Su and Lowe, of claim 31 over Su, Lowe, and Zimmermann, and of claims 50-53 and 55 over Su, Lowe, and Allen.

DECISION

The decision of the Examiner rejecting claims 1 and 7 under 35 U.S.C. § 102 and claims 2-6, 8-10, 12, 13, 16-20, 22-26, 29-31, 33, 34, 43-47, 49-53, 55-60, 62, 63, 66-69, and 71-81 under 35 U.S.C. § 103 is affirmed.

Appeal 2007-0205
Application 09/812,302

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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